Light Source

Specification
&
User Manual

User's Manual **Rev. 2011A**

Light Source

1.1 Description

Light Source is a handy tool and instrument to provide you several different wavelengths to test the fiber equipment in the optical network and FTTx construction. Light Source is ideal for field or laboratory testing of optical communication system at 850 nm / 1300 nm for datacom testing, 1310 nm / 1550 nm / CWDM 1270 nm ~ 1610 nm (20 nm spans) for all WDM testing , as well as 1490 nm for FTTx testing by changing interchangeable SFP module. Light Source features zero warm up, superb productivity and is easy to use with pocket-size and rugged and handy design.

With LC / SC patch cord , Light Source can be used for all the most widespread fiber interfaces such as LC / ST / SC / FC connector. It is suitable to test both Singlemode and Multimode cables.

Internally there is also a specifically designed power circuit included; the APC (Auto Power Control) circuit provides steady power which avoids unstable laser output when the battery is low.

The LD output signal can be switched CW or Pulse Mode 270 Hz / 2 KHz Modulated Mode to simulate signal transmission. There is a dust proof cap which will prevent dust from getting into the inside of the LD connector. The cap also helps evade incidental exposure of the laser directly into your eyes.

1.2 Features

- Pocket-size & rugged & handy design.
- Needless to pre-warm-up time.
- Interchangeable SFP Module design with LC or SC connector.
- Flexible to change any wavelength.
- High stability of the Output Power.
- Excellent & stable output wavelength.
- Excellent re-connection repeatability.

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- Low Voltage Battery warning signal in LED.
- Compatible to LC Connectors.
- Economic type and easy to use.
- Operates in CW (Continuous Wave) or Pulse Mode 270 Hz / 2 KHz
- The dust-proof design keeps fiber connectors clean
- Two AAA-size alkaline batteries
- LED indicator for Power, Battery Low indicators

1.3 Application

- Maintenance CATV / Telecom / FTTH in Singlemode or Multimode fiber optical fiber network.
- Standard laboratories.
- High throughput quality assurance.

2. Specification

Laser Class	**Class 1**
Wavelength (nm)	VSCEL 850 nm, LED1300 nm, DFB LD 1310 nm, 1550 nm CWDM LD 1270 nm, 1290 nm, 1310 nm, 1330 nm, 1350 nm, 1370 nm, 1390 nm, 1410 nm, 1430 nm, 1450 nm, 1470 nm, 1490 nm, 1510 nm, 1530 nm, 1550 nm, 1570 nm, 1590 nm, 1610 nm, 1625 nm
Mode	**CW / Pulse Mode 270 Hz / 2 KHz**
Battery Type	**AAA 1.5 V x 2**
LED Indicator	**Power On (GREEN) / Battery Low (RED)**
Output Power Accuracy	**+/- 0.2 dB**
Output Power Stability (1 HR)	**+/- 0.05 dB**
Operating Temp.	**0℃ ~ 50℃**
Storage Temp.	**0℃ ~ 70℃**

VSCEL 850 nm	Min.	Typ.	Max.	Unit	Note
VCSEL Output Power	-5			dBm	@ 25℃ 62.5 / 125 μm fiber
Center Wavelength λC		850		nm	@ 25℃ 62.5 / 125 μm fiber
Spectral Width Δ λ			0.85	nm	@ 25℃ 62.5 / 125 μm fiber

LED1300 nm	Min.	Typ.	Max.	Unit	Note
LED Output Power	-22			dBm	@ 25℃ 62.5 / 125 μm fiber
Center Wavelength λC	1270	1300	1370	nm	@ 25℃ 62.5 / 125 μm fiber
Spectral Width Δ λ (FWHM)		130	180	nm	@ 25℃ 62.5 / 125 μm fiber

FP LD 1310 nm	Min.	Typ.	Max.	Unit	Note
FP LD Output Power	-5			dBm	@ 25℃ 9 / 125 μm fiber
Center Wavelength λC	1290	1310	1330	nm	@ 25℃ 9 / 125 μm fiber
Spectral Width Δ λ			<4	nm	@ 25℃ 9 / 125 μm fiber

FP LD 1550 nm	Min.	Typ.	Max.	Unit	Note
FP LD Output Power	-5			dBm	@ 25℃ 9 / 125 μm fiber
Center Wavelength λC	1520	1550	1570	nm	@ 25℃ 9 / 125 μm fiber
Spectral Width Δ λ			<4	nm	@ 25℃ 9 / 125 μm fiber

DFB LD 1310 nm	Min.	Typ.	Max.	Unit	Note
DFB LD Output Power	-3			dBm	@ 25℃ 9 / 125 μm fiber
Center Wavelength λC	1290	1310	1330	nm	@ 25℃ 9 / 125 μm fiber
Spectral Width Δ λ			<1	nm	@ 25℃ 9 / 125 μm fiber

DFB LD 1550 nm	Min.	Typ.	Max.	Unit	Note
DFB LD Output Power	-3			dBm	@ 25℃ 9 / 125 μm fiber
Center Wavelength λC	1530	1550	1570	nm	@ 25℃ 9 / 125 μm fiber
Spectral Width Δ λ			<1	nm	@ 25℃ 9 / 125 μm fiber

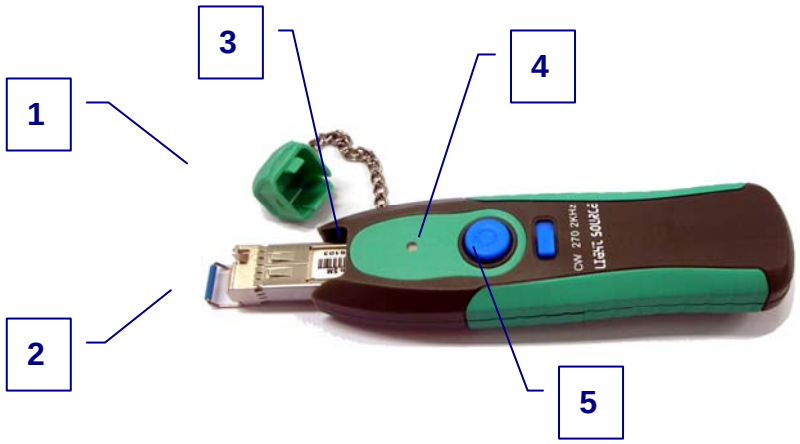
CWDM LD xxxx nm	Min.	Typ.	Max.	Unit	Note
CWDM LD Output Power	-3			dBm	@ 25℃ 9 / 125 μm fiber
Center Wavelength λC	λC *- 3	λC *	λC *+3	nm	@ 25℃ 9 / 125 μm fiber
Spectral Width Δ λ			<1	nm	@ 25℃ 9 / 125 μm fiber

*CWDM LD λC:

CWDM LD xxxx nm :

1270 nm / 1290 nm / 1310 nm / 1330 nm / 1350 nm / 1370 nm / 1390 nm / 1410 nm / 1430 nm / 1450 nm / 1470 nm / 1490 nm / 1510 nm / 1530 nm / 1550 nm / 1570 nm / 1590 nm / 1610 nm / 1625 nm

3. Operating Instructions



1. Dust Cap : prevent dirt contaminates the LD .
2. SFP Module : Interchangeable single LC or SC connector hot swap SFP module for identical wavelength.
3. LED Indicator : Power On and In Operation indicator (GREEN) and Battery Low Warning indicator (RED) .
4. Button : pressing to Turn On / Turn Off the LD emitting.
5. Mode Switch : to select CW Continuous Wave Mode / Pulse Mode 270 Hz / 2 KHz Switch.
6. Pen Clip : a design to fasten the tool while put inside pocket.
7. Battery Lid : to open to change batteries.
8. Linchpin : a mechanical design to lock the Battery Lid.

1. The Light Source is powered by two pieces 1.5 V AAA batteries.
2. To inset Plug-In Module inside the Light Source Main Frame, press Button and check if the LED is GREEN.
3. To press Button to Turn Off Light Source.

4. **Lift the front of the Dust Cap and insert on end of the fiber connector to the LC connector or directly insert to a connector of the fiber or LC / SC / FC patch cord.**
5. **Switch to select to CW Mode or Pulse Mode 270 Hz / 2 KHz.**
6. **To press the Button to Turn On Light Source. LED Indicator now is GREEN while the Light Source is in operation.**
7. **To press the Button second time to Turn Off Light Source. The LED Indicator will be turned off.**
8. **When the LED Indicator is RED, this means batteries are almost drained out and in low voltage status. You will need to replace the batteries right away to keep the tool in right functions.**
9. **Do not touch the Light Source connector to avoid dirt into the connector.**
10. **Keep the Dust Cap closed all the time while the Light Source is not in use.**
11. **With proper cleaning tools to clean the Light Source SFP connector before testing so that to obtain best results and keep the Light Source service longer.**

4. Maintenance

This tool requires no maintenance other than periodic battery charges. Like any other electronic equipment, this tool should be kept away from water, high damp, dust, electricity, and environments of extreme temperature. Do not drop this tool on hard surface. Modifying internally any of this tool components can cause a malfunction and will invalid the manufacturer's warranty.

5. Warranty

The manufacturer warrants this product to be free of defects in workmanship and materials for a period of 1 year after purchase. This warranty (excluding batteries) is solely limited to the repair and replacement of original parts, which are defective in workmanship of materials. All other costs should be the sole responsibility of the owner. This warranty does not cover any defects, damage, and deterioration due to misuse, alteration, or negligence.

6. Ordering Information:

P/N	Description	
ITP-13	Light Source (1310nm FP SFP Module / SC)	
ABC-XX	A: K (Light Source with & main frame), L (Plug-in module) B: V (VSCEL), L (LED), F (FP LD), D (DFB LD), C (CWDM LD)	C: L (LC connector), S (SC connector) XX: middle 2 digits of wavelength

7. Service Contacts

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